DEPARTMENT OF THE ARMY



MISSISSIPPI VALLEY DIVISION, CORPS OF ENGINEERS P.O. BOX 80
VICKSBURG, MISSISSIPPI 39181-0080

CEMVD-PD-KM

5 February 2013

MEMORANDUM FOR Commander, Memphis District, ATTN: CEMVM-PM-P

SUBJECT: MVD Continuing Authorities Program (CAP) Model Review Plan and Model Review Plan Checklist Germantown Sewer Crossing Utility, Tennessee, Section 14 Project, Memphis District

1. References:

- a. Memorandum, CEMVM-PM-P, 10 January 2013, subject as above (encl 1).
- b. Memorandum, CEMVD-RB-T, 1 February 2013, subject: Review Plan for Germantown Sewer Crossing Utility, TN, Section 14 Project (encl 2).
 - c. EC 1165-2-214, Civil Works Review, 15 December 2012.
- 2. MVD staff has reviewed the Review Plan (RP) and related documents for the subject project. The RP was also reviewed and endorsed by the Review Management Organization (encl 2). The RP was developed in accordance with reference 1.c., which establishes an accountable, comprehensive, life cycle review strategy for civil works products by providing a seamless process for review of all civil works projects from initial planning through design, construction, and Operation, Maintenance, Repair, Replacement, and Rehabilitation.
- 3. The subject RP is hereby approved. Please post the approved RP to your web page.
- 4. The MVD point of contact for this action is Ms. Sarah Palmer, CEMVD-PD-KM, (601) 634-5910.

2 Encls

EDWARD E. BELK, JR., P.E., SES

Director of Programs



DEPARTMENT OF THE ARMY

MEMPHIS DISTRICT CORPS OF ENGINEERS 167 NORTH MAIN STREET B-202 MEMPHIS, TENNESSEE 38103-1894

10 January 2013

MEMORANDUM FOR Commander, Mississippi Valley Division (CEMVD-PD-KM/Michael Warren), P.O. Box 80, Vicksburg, MS 39181-0080

SUBJECT: MVD Continuing Authorities Program (CAP) Model Review Plan and Model Review Plan Checklist, Germantown Sewer Crossing Utility, Tennessee, Section 14 Project, Memphis District

- 1. The Model Review Plan (RP) and Model Review Plan Checklist for the Germantown Sewer Crossing Utility, Tennessee, Section 14 Project are submitted for MVD review and approval. The RP was developed in accordance with the MVD Model Review Plan Guidance for Section 14 projects. Electronic copies of the subject review plan and review plan checklist have been sent to Glennard Warren, DST and copy furnished Brian Chewning and Sarah Palmer.
- 2. The Memphis District points of contact for the project are Clyde Hunt, Project Manager, (901)-544-3115, or email: clyde.e.hunt@usace.army.mil; or Jackie Whitlock, CAP Program Manager, (901)-544-3832 or email: jackie.s.whitlock@usace.army.mil.

VERNIE L. REICHLING

Colonel, EN Commanding

REVIEW PLAN Using the MVD Model Review Plan for Section 14, 107, 111, 204, 206, 208, or 1135 Projects, or Projects directed by Guidance to use CAP processes

Germantown Sewer Crossing Utility, TN Section 14 Project

Memphis District

MSC Approval Date: Last Revision Date: Submitted 10 January 2013



Review Plan Using the MVD Model Review Plan

Germantown Sewer Crossing Utility, TN Section 14 Project

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1. Purpose and Requirements.

a. Purpose. This Review Plan defines the scope and level of peer review for the Germantown Sewer Crossing Utility, TN, Section 14 Project products - Project Factsheet; an environmental assessment; cost estimate; economic analysis; hydraulic and hydrologic analysis; geotechnical analysis; real estate plan; and drawings and specifications.

Section 14 of the Flood Control Act of 1946, as amended, authorizes the US Army Corps of Engineers (USACE) to study, design and construct emergency streambank and shoreline works to protect public services including (but not limited to) streets, bridges, schools, water and sewer lines, National Register sites, and churches from damage or loss by natural erosion. This is a Continuing Authorities Program (CAP) which focuses on water resource related projects of relatively smaller scope, cost and complexity. Unlike the traditional Corps' civil works projects that are of wider scope and complexity, the Continuing Authorities Program is a delegated authority to plan, design, and construct certain types of water resource and environmental restoration projects without specific Congressional authorization.

Additional Information on this program can be found in Engineering Regulation 1105-2-100, Planning Guidance Notebook, Appendix F, Amendment #2.

b. Applicability. This review plan is based on the MVD Model Review Plan for Section 14, 107, 111, 204, 206, 208, or 1135 Projects or Programs directed by guidance to follow CAP processes, which is applicable to projects that do not require Independent External Peer Review (IEPR), as defined by the mandatory Type I IEPR triggers contained in EC 1165-2-209, Civil Works Review Policy.

c. References:

- (1) Engineering Circular (EC) 1165-2-209, Civil Works Review Policy, 31 January 2010.
- (2) Director of Civil Works' Policy Memorandum #1, CECW-P, dated 19 January 2011.
- (3) EC 1105-2-412, Assuring Quality of Planning Models, 31 March 2010.
- (4) Engineering Regulation (ER) 1110-1-12, Quality Management, 30 September 2006.
- (5) ER 1105-2-100, Planning Guidance Notebook, Appendix F, Continuing Authorities Program, Amendment #2, 31 January 2007.
- (6) ER 1105-2-100, Planning Guidance Notebook, Appendix H, Policy Compliance Review and Approval of Decision Documents, Amendment #1, 20 November 2007.
- (7) PMP to be developed during D&I phase

2. Review Management Organization (RMO) Coordination.

The RMO is responsible for managing the overall peer review effort described in this review plan. The RMO for Section 14 is MVD. MVD will coordinate and approve the review plan and manage the Agency Technical Review (ATR). The home District will post the approved review plan on its public website.

3. Project Information.

a. Decision and Implementation Document - Planning Design & Analysis Report (Fact Sheet). The Germantown Sewer Crossing Utility, TN, Section 14 Project decision document will be prepared in accordance with ER 1105-2-100, Appendix F, Amendment #2. The approval level of the decision document (if policy compliant) is MVD. An Environmental Assessment (EA) will be prepared along with the decision document. Plans and Specifications (P&S) will also be prepared for implementation of the project and will undergo ATR review.

b. Study/Project Description. The study area is located in the city of Germantown, in Shelby County, Tennessee, about 3,500 feet east of the intersection of Kimbrough Road and Farmington Boulevard. Erosion along a major lateral that flows thru the city has threatened a force main interceptor sewer line. The integrity of the sewer crossing could become further endangered with the next high water event. There have been previous bank failures as pictured on the left below. After that event a new sheetpile weir was constructed to stabilize the banks (pictured on right). The grouted riprap at the outfall of the weir is collapsing and threatens to undermine the weir.



Previous bank failure at weir location. Storm main is visible on the right edge of the picture.



Weir and bank after reconstruction. Note erosion occurring at edge of the existing concrete apron.

The tentatively preferred alternative is: placement of a trapezoidal stepped weir made of reinforced concrete and sheet pile. Another alternative considered was very similar but constructed with rip rap rather than concrete. The non-Federal Sponsor is the City of Germantown. The preliminary cost estimate is \$2,700,000, and the estimated BCR is in excess of 30. The final design and recommendation will be completed with consideration of the maximum federal limit of \$1.5M for section 14 projects. This alternative will not raise flowlines upstream of the existing sheet pile weir.

- **c. Factors Affecting the Scope and level of Review**. The model review plan is appropriate for this project because the scope is limited to a very small area and the project is needed to reduce risks. The existing structures are at risk of failure; failure would have economic, social, and environmental consequences. Standard baffle block and grade control structures have been modified to fit in the channel. The designs are not untested or innovative and are similar to others MVM has successfully installed. There are no social or environmental issues with construction. The only uncertainty/risk lies in the calculation of how long the structure will last and continue to provide benefits
- **d. In-Kind Contributions.** Products and analyses provided by non-Federal sponsors as in-kind services are subject to District Quality Control (DQC) and ATR, similar to any products developed by USACE. No in-kind contributions are anticipated.

4. District Quality Control (DQC).

All decision documents (including supporting data, analyses, environmental compliance documents, etc.) shall undergo DQC prior to ATR. DQC is an internal review process of basic science and engineering work products focused on fulfilling the project quality requirements defined in the Project Management Plan (PMP). The Memphis District (home district) shall manage DQC in accordance with MVD and district Quality Management Plan. Any discrepancies between a reviewer and a Project Delivery Team (PDT) member will be resolved face-to-face. If a concern cannot be satisfactorily resolved between the DQC team and the PDT, it will be elevated to the section supervisor for further resolution.

DrChecks will be used to document the DQC review. The review will require a journey-level hydrologist, geotechnical engineer, planner w/ NEPA experience, cost engineer, civil engineer, real estate specialist, and economist. The DQC review and comment, response, and backcheck should take no more than two weeks.

5. Agency Technical Review (ATR).

One ATR is mandatory for all decision documents (including supporting data, analyses, environmental compliance documents, etc.), however additional ATRs may be performed if deemed warranted. ATR shall be documented and discussed at the Alternative Formulation Briefing (AFB) milestone. Certification of the ATR will be provided prior to the District Commander signing the final report. ATR is managed within USACE by the designated RMO (Mississippi Valley Division) and is conducted by a qualified team from outside the home district that is not involved in the day-to-day production of the project/product. ATR teams will be comprised of senior USACE personnel. The ATR team lead will be from within the home Major Subordinate Command (MSC), Mississippi Valley Division.

a. Products to Undergo ATR. ATR will be performed throughout the project in accordance with the District and MVD Quality Management Plans. Products to undergo ATR include: Planning Design & Analysis Report and P & S.

b. Required ATR Team Expertise.

Due to the limited nature of the alternatives considered that are all designed to dissipate flow energy, the warranted engineering review is limited to a senior hydraulic engineer and the cost engineer.

ATR Team Members/Disciplines	Expertise Required
ATR Lead	The ATR lead should be a senior professional preferably with
	experience in preparing Section 14 documents and conducting
	ATR. The lead should also have the necessary skills and

	experience to lead a virtual team through the ATR process. Typically, the ATR lead will also serve as a reviewer for a specific discipline (such as planning, economics, environmental resources, etc). The ATR Lead MUST be from outside Memphis District, and will likely be an experienced ATR Lead from St. Louis district.
Planning	The Planning reviewer should be a senior water resources planner with experience in Section 14 and general planning policy. This reviewer will only review the planning document and not the P&S. For this effort, the planning review shall also have experience the NEPA and at least the preparation of Environmental Assessments
Economics	The economics reviewer will be an expert in the field of economics with experience valuing damage to public infrastructure. Will not be involved in P&S ATR.
H&H Engineering	The hydraulic engineering reviewer will be an expert in the field of hydraulics and have a thorough understanding of steam erosion and bank stabilization techniques and HEC-RAS.
Cost Engineering	Cost DX Staff or Cost DX Pre-Certified Professional with experience preparing cost estimates for small bank stabilization projects.

c. Documentation of ATR. DrChecks review software will be used to document all ATR comments, responses and associated resolutions accomplished throughout the review process. Comments should be limited to those that are required to ensure adequacy of the product. Any editorial comments should be provided informally by email to the PDT.

6. Policy And Legal Compliance Review.

All decision documents will be reviewed throughout the study process for their compliance with law and policy. Guidance for policy and legal compliance reviews is addressed in Appendix H, ER 1105-2-100. These reviews culminate in determinations that the recommendations in the reports and the supporting analyses and coordination comply with law and policy, and warrant approval or further recommendation to higher authority by the MVD Commander. DQC and ATR augment and complement the policy review processes by addressing compliance with pertinent published Army policies, particularly policies on analytical methods and the presentation of findings in decision documents.

7. Cost Engineering Directory of Expertise (DX) Review And Certification.

For CAP projects, ATR of the costs may be conducted by pre-certified district cost personnel within the region or by the Walla Walla Cost DX. The pre-certified list of cost personnel has been established and is maintained by the Cost DX at https://kme.usace.army.mil/EC/cost/CostAtr/default.aspx. The cost ATR member will coordinate with the Cost DX for execution of cost ATR and cost certification. The Cost DX will be responsible for final cost certification and may be delegated at the discretion of the Cost DX.

8. Model Certification And Approval.

Approval of planning models under EC 1105-2-412 is not required for CAP projects. MSC commanders remain responsible for assuring the quality of the analyses used in these projects. ATR will be used to ensure that models and analyses are compliant with Corps policy, theoretically sound, computationally

accurate, transparent, described to address any limitations of the model or its use, and documented in study reports.

EC 1105-2-412 does not cover engineering models used in planning. The responsible use of well-known and proven USACE developed and commercial engineering software will continue and the professional practice of documenting the application of the software and modeling results will be followed. As part of the USACE Scientific and Engineering Technology (SET) Initiative, many engineering models have been identified as preferred or acceptable for use on Corps studies and these models should be used whenever appropriate. The selection and application of the model and the input and output data is still the responsibility of the users and is subject to DQC, ATR, and IEPR (if required).

Planning and Engineering Models. The following models are anticipated to be used in the development of the decision document:

Model Name and Version	Brief Description of the Model and How It Will Be Applied in the Study
HEC-RAS & HEC-1	These are standard engineering models used to calculate peak flows and flowlines.

9. Review Schedules And Costs.

ATR Schedule and Cost.

ATR of the planning document will be done in February 2013 prior to the AFB at an estimated cost of \$5000. The AFB will follow the completion of the ATR, and is anticipated in April 2013.

ATR of the P&S will be scheduled after D&I funds are received.

10. Public Participation.

State and Federal resource agencies may be invited to participate in the study covered by this review plan as partner agencies or as technical members of the PDT, as appropriate.

The public will have a chance to review the planning documents after the AFB is complete. The documents will be made available in compliance with the updated requirements of EC 1165-2-412 (15 December 2012) when the Approved Review plan is placed onto the Memphis District internet web site. There will be a public comment submission venue established from that web site. The web site will be available also through links to the Memphis District web site from the Corps of Engineers Headquarter web site.

11. Review Plan Approval And Updates.

The MVD DST Chief is responsible for approving this review plan and ensuring that use of the MVD Model Review Plan is appropriate for the specific project covered by the plan. The review plan is a living document and may change as the study progresses. The home district is responsible for keeping the review plan up to date. Minor changes to the review plan since the last MVD approval are documented in Attachment 2. Significant changes to the review plan (such as changes to the scope and/or level of review) should be reapproved by MVD following the process used for initially approving the plan. Significant changes may result in MVD determining that use of the MVD Model Review Plan is no longer appropriate. In these cases, a project specific review plan will be prepared and approved in

accordance with EC 1165-2-209. The latest version of the review plan, along with the MVD approval memorandum, will be posted on the home district's webpage.

12. Review Plan Points Of Contact.

Public questions and/or comments on this review plan can be directed to the following points of contact:

- Jackie Whitlock, CAP Program Manager, 901-544-3832
- Mike Warren, MVD District Support Team, 601-634-5070

Attachment 1: Project Development Team Rosters

Germantown Sewer Crossing Utility, TN, Section 14 Project Study Team			
Name	Functional Area	e-mail	Phone
Clyde Hunt	Project Manager	Clyde.E.Hunt@usace.army.mil	901-544-3115
Jackie Whitlock	Project Manager	Jackie.S.Whitlock@usace.army.mil	901-544-3832
Getrisc ''Gigi'' Coulson	Study Manager	Getrisc.Coulson@usace.army.mil	504-862-1095
Robert Hunt	Hydrologist	Robert.L.Hunt@usace.army.mil	901-544-0875
Doug Young	Economist/Real Estate Appraiser	Doug.B.Young@usace.army.mil	901-544-3154
Kevin Pigott	Biologist	Kevin.R.Pigott@usace.army.mil	901-544-4309
Neal Newman	Cost Engineer	Neal.E.Newman@usace.army.mil	901-544-8090
Derrick Brasher	Civil Engineer	Derrick.M.Brasher@usace.army.mil	901-544-0889
Ben Tatum	Geotechnical Engineer	John.B.Tatum@usace.army.mil	901-544-4216
Sarah Palmer	CAP Mngr & RMO Rep	Sarah.T.Palmer@usace.army.mil	601-634-5910
Michael Warren	District Support Team	Glennard.M.Warren@usace.army.mil	601-634-5070

Attachment 2: Review Plan Revisions

Revision Date	Description of Change	Page/Paragraph Number
2013 January18	Two sentences regarding the Federal cost limit for section 14's and that the plans and specs would undergo ATR were added at MVD request/direciton.	Section 3 paragraphs a. and b.

Attachment 3: Draft MSC Approval Memorandum

Date:

Subject: Review Plan approval for Germantown Sewer Crossing Utility, TN Section 14 Project

The attached Review Plan for the Germantown Sewer Crossing Utility, TN Section 14 Project has been prepared in accordance with EC 1165-2-214.

The Review Plan has been coordinated with the Review Management Official, Rayford Wilbanks of the Mississippi Valley Division which is the lead office to execute this plan. For further information, contact the RMO at 601-634-5847. The Review Plan does not include independent external peer review.

I hereby approve this Review Plan, which is subject to change as circumstances require, consistent with study development under the Project Management Business Process. Subsequent revisions to this Review Plan or its execution will require new written approval from this office.

MSC Commander Signature Block

Attachment 4: MVD CAP Review Plan Checklist

Date:	12/9/12	
Originating District:	Memphis	
Project/Study Title:	Germantown Sewer Section 14	
P2# and AMSCO#:		
District POC:	Jackie Whitlock	
MSC Reviewer:		
CAP Authority:	14	
Other Program Directed to follow CAP Processes:		

Please fill out this checklist and submit with the draft Review Plan when coordinating with the MSC. Any evaluation boxes checked "No" may indicate the project may not be able to use the MVD Model Review Plan. Further explanation may be needed or a project specific review plan may be required. Additional coordination and issue resolution may be required prior to MSC approval of the Review Plan. Checklist may be limited to Section I or Section II or Both, depending on content of review plan (or subsequent amendments).

Section I - Decision Documents

REQUIREMENT	EVALUATION
1. Is the Review Plan (RP) for a Continuing Authorities Project?	Yes ⊠ No □
Or Other Program Directed to follow CAP Processes?	Yes ☐ No ⊠
a. Does it include a cover page identifying it as following the Model RP and listing the project/study title, originating district or office, and date of the plan?	a. Yes 🛛 No 🗌
b. Does it include a table of contents?	b. Yes 🖂 No 🗌
c. Is the purpose of the RP clearly stated?	c. Yes No
d. Does it reference the Project Management Plan (PMP) of which the RP is a component?	d. Yes 🗵 No 🗌
e. Does it succinctly describe the levels of review: District Quality Control (DQC), Agency Technical Review (ATR), and Independent External Peer Review (IEPR) if applicable for Sec 103 or Sec 205?	e. Yes 🗵 No 🗌
f. Does it include a paragraph stating the title, subject, and purpose of the decision document to be reviewed?	f. Yes 🛛 No 🗌
g. Does it list the names and disciplines of the Project Delivery Team (PDT)?*	g. Yes 🛛 No 🗌
*Note: It is highly recommended to put all team member names and contact information in an appendix for easy updating as team members change or the RP is updated. Comments: Per EC 1165-2-214, Appendix B, Paragraph 6.a, reviewer names	

should not be listed in the posted approved review plan, and will be removed following approval.	
2. Is the RP detailed enough to assess the necessary level and focus of the reviews?	Yes No 🗌
3. Does the RP define the appropriate level of review for the project/study?	Yes 🛛 No 🗌
a. Does it state that DQC will be managed by the home district in accordance with the MVD and district Quality Management Plans?	a. Yes 🛛 No 🗌
b. Does it state that ATR will be managed by MVD?	b. Yes ⊠ No □
c. Does it state whether IEPR will be performed? For Sec 103 and Sec 205, see additional questions in 5. below. Comments: Not applicable - no life risks	c. Yes 🗌 No 🖂
4. Does the RP explain how ATR will be accomplished?	Yes 🛛 No 🗌
a. Does it identify the anticipated number of reviewers?	a. Yes 🛛 No 🗌
b. Does it provide a succinct description of the primary disciplines or expertise needed for the review (not simply a list of disciplines)?	b. Yes No No
c. Does it indicate that ATR team members will be from outside the home district?	c. Yes 🛛 No 🗌
d. Does it indicate where the ATR team leader will be from?	d. Yes ⊠ No □
e. If the reviewers are listed by name, does the RP describe the qualifications and years of relevant experience of the ATR team members?*	e. Yes 🗌 No 🖂
*Note: It is highly recommended to put all team member names and contact information in an appendix for easy updating as team members change or the	
RP is updated. Comments: Per EC 1165-2-214, Appendix B, Paragraph 6.a, reviewer names should not be listed in the posted approved review plan. Additionally, the RMO determines the list of ATR reviewers per Appendix B, paragraph 4. K. (1). Therefore the District would not have that list in this initial submittal. Suggested reviewers can be provided by the District if needed.	
5. For Sec 103 and Sec 205 projects, does the RP explain how IEPR will be accomplished?	Yes No n/a
a. Is an exclusion being requested, requiring CG approval?	a. Yes 🗌 No 🗌
b. Does it provide a defensible rationale for the decision on IEPR?	b. Yes 🗌 No 🗌
c. If IEPR is required, does it state that IEPR will be managed by an Outside Eligible Organization, external to the Corps of Engineers?	c. Yes No
d. If IEPR is required, does the RP indicate which PCX will manage the	d. Yes No

IEPR and whether any coordination with the PCX has occurred? Comments:	
6. Does the RP address review of sponsor in-kind contributions?	Yes No 🗌
7. Does the RP address how the review will be documented?	Yes 🛛 No 🗌
a. Does the RP address the requirement to document ATR and IEPR comments using Dr Checks?	a. Yes 🛛 No 🗌
b. Does the RP explain how the IEPR will be documented in a Review Report?	b. Yes No n/a
c. Does the RP document how written responses to the IEPR Review Report will be prepared?	c. Yes No No n/a
c. Does the RP detail how the district will disseminate the final IEPR Review Report, USACE response, and all other materials related to the IEPR on the internet and include them in the applicable decision document? Comments:	d. Yes No n/a
8. Does the RP address Policy Compliance and Legal Review?	Yes 🛛 No 🗌
9. Does the RP present the tasks, timing and sequence (including deferrals), and costs of reviews?	Yes ⊠ No □
a. Does it provide a schedule for ATR including review of the Alternative Formulation Briefing (AFB) materials and final report?	a. Yes 🛛 No 🗌
b. Does it present the timing and sequencing for IEPR?	b. Yes No n/a
c. Does it include cost estimates for the reviews?	c. Yes 🛛 No 🗌
10. Does the RP indicate the study will address Safety Assurance factors? Factors to be considered include:	Yes No No n/a
 Where failure leads to significant threat to human life Novel methods\complexity\ precedent-setting models\policy changing conclusions Innovative materials or techniques Design lacks redundancy, resiliency of robustness Unique construction sequence or acquisition plans Reduced\overlapping design construction schedule 	Comments:
11. Does the RP address opportunities for public participation?	Yes No 🗌
12. Does the RP indicate ATR of cost estimates will be conducted by precertified district cost personnel who will coordinate with the Walla Walla Cost DX?	Yes No 🗌

13. Has the approval memorandum been prepared and does it accompany the RP?	Yes No 🗌
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